

***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1 and 4-11 are pending in the application, with claims 1, 8, 10 and 11 being the independent claims. Claims 1, 6, 8, 10, and 11 are sought to be amended. Claims 2-3 and 12-15 were previously cancelled without prejudice or disclaimer of the subject matter therein. Applicant reserves the right to prosecute similar or broader claims, with respect to the cancelled and amended claims, in the future. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

***Rejection under 35 U.S.C. § 103***

The Examiner, at page 2 of the Office Action, rejected claims 1 and 4-11 under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,558,794 to Jansens (hereinafter "Jansens") in view of U.S. Patent No. 4,575,620 to Ishii et al. (hereinafter "Ishii"). Applicant respectfully traverses this rejection.

***1. Claims 1 and 4-11 recite features that are not taught by the applied references.***

Without acquiescing to the propriety of the rejection, Applicant has amended claims 1, 6, 8, 10, and 11 for other reasons and to expedite prosecution. Independent claims 1, 8, 10, and 11 recite features that distinguish over the applied references. For example, claim 1 recites, *inter alia*, (emphasis added) "a heating element extending

longitudinally along the cable, wherein the heating element comprises a semi-conductor having a positive temperature coefficient, *and the cable further comprises at least one conductive terminal located at an end of the cable.*" Independent claims 8, 10, and 11 recite, using respective language, similar distinguishing features.

On page 2 of the Office Action, the Examiner states, which Applicant does not acquiesce to, that Jansens teaches:

a resistance heating cable/method of manufacturing comprising a heating element extending longitudinally along the cable wherein the element has a positive temperature coefficient (PTC) and is self regulating, and capable of being used in a car seat.

On page 2 of the Office Action, the Examiner states, which Applicant does not acquiesce to, that Ishii teaches:

A semiconductor PTC comprising a polymer having a high density polyethylene matrix including carbon

However, neither Jansens nor Ishii is used by the Examiner in the Office Action to teach or suggest, nor do they teach or suggest, at least the above-noted distinguishing features of claims 1, 8, 10, and 11. Thus, the applied references cannot be used to establish a prima facie case of obviousness.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection, and find the claims allowable over the applied references. Also, at least based on their respective dependencies to claims 1 and 8, claims 4, 5, 6, 7, and 9 should be found patentable over the applied references, as well as for their additional distinguishing features.

***2. No Prima Facie Case of Obviousness Established***

Applicant respectfully submits that the Examiner has not set forth a reason why a skilled artisan would arrive at the heating cable according to the claimed elements in view of the respective heating cables taught by Jansens and Ishii. Absent a reason to make and use the cable according to the claimed elements, no *prima facie* case of obviousness has been established.

In *KSR v. Teleflex*, the Supreme Court ruled that an Examiner must provide "some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness." *KSR v. Teleflex*, 550 U.S. \_\_\_, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007) (*KSR* opinion at page 14). An Examiner must "identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* at page 15 of the opinion. The Examiner must make "explicit" the rationale of "the apparent reason to combine the known elements in the fashion claimed," including a detailed explanation of "the effects of demands known to the design community or present in the marketplace" and "the background knowledge possessed by a person having ordinary skill the art." *Id.* at page 14 of the opinion.

It has been held by the courts, moreover, that there needs to be a clear path shown in one or more references leading to the claimed combination. It is improper under the law when there are multiple avenues that can be taken to arrive at a combination that just showing piecemeal parts of the combination claim in various references is enough to prove a *prima facie* case of obviousness. See, e.g., *Takeda Chemical v. Alphapharm*, 492 F.3d 1350 (Fed. Cir. 2007) (stating there must be a reason that would have lead an

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inventor to modify an element to establish a prima facie case even though the techniques to modify the element are well known, where this is especially true when there is a broad selection of elements from which to choose, such that choosing one over another, without clear guidance from the reference why it would be done, is not necessarily obvious without more); *Lucent Technologies v. Gateway*, 537 F.Supp.2d 1095 (S.D. Cal. 2008) (stating where there are many techniques known at the time of the invention, it may take more than common sense to settle on a particular combination of steps out of many possibilities).

The Examiner states at page 2 of the Office Action:

"It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a semiconductor PTC comprising a polymer having a high density polyethylene matrix including carbon of Ishii et al in the heating cable of Jansens because a semiconductor PTC comprising a polymer having a high density polyethylene matrix including carbon allows for a more uniform heating."

The Examiner cites no portion of Ishii that teaches that a semiconductor "allows for more uniform heating," but rather makes a statement with no support other than the Examiner's intuition. Moreover, Ishii does not merely disclose a "polymer having a high density polyethylene matrix including carbon," but instead discloses many alternative materials that the PTC body in Ishii may comprise:

The PTC heating body 3 comprises a polymer compound containing a particulate conductive material such as carbon black. Resins for use as such a polymer compound include polyolefins such as a polyethylene-vinyl acetate copolymer, a polyethylene-ethyl acrylate copolymer, polyethylene, polypropylene, and the like, and crystalline resins such as polyamide, polyhalogenated vinylidene, polyester, and the like (Ishii, col. 5, lines 35-40)

Ishii does not teach that these compounds are semiconductors and does not teach that a semiconductor would "allow for more uniform heating" than a metallic element, but instead merely discloses a list of possible materials. Further, Jansens discloses long lists of metallic materials that may be used to form the heating element (referred to as the "central strand") at column 1, lines 50 to 52. The Examiner fails to explain why a person of ordinary skill, after reading the long lists of possible PTC heating body materials disclosed in Jansens and Ishii, would decide to create the cable according to the claimed elements.

Therefore, the Examiner has not, under the prevailing law, established a prima facie case of obviousness with her conclusory statements regarding the multiple references having different pieces of the claims obviously teaching the novel combination in the claims of the instant application.

***3. The claimed elements are patentable over the applied references because the claimed elements solve a long felt, unsolved need***

It would ***not*** have been obvious to a person having ordinary skill in the art to have included a semiconductor because the combination of features recited in the claims solve a long felt, unsolved need.

Ishii was published in 1986 and Jansens was filed in 1994. Despite the eight years that passed between the publication of Ishii and the filing of Jansens, nowhere in Jansens is the advantageous use of a semiconductor heating element with a positive temperature coefficient disclosed, even though such semiconductor heating elements with positive temperature coefficients were known at the time of the filing of Jansens (e.g., from Ishii).

Also, although the present application was filed in 2003, which is 7 years after Jansens and 17 years after Ishii, no heating cable having the combination of features as recited in claims 1, 8, 10, and 11 has been disclosed, suggested, or taught in any references discovered by the Examiner.

In the field of heating cables, it has long been desirable to provide the most technically effective self-regulating cable that can be produced as cheaply and as easily as possible. The use of a semiconductor heating element in a series self-regulating heating cable meets these requirements. The combination of features as recited in the claims has therefore fulfilled a long felt need in the field of heating cables. The fulfillment of this long felt need is non-trivial and non obvious.

Therefore, since the documents cited by the Examiner have been known for at least seven years prior to the priority date of this application, yet no cable combining the features of the documents cited by the Examiner to result in the heating cable described by the claimed elements has been disclosed, the claimed elements are not obvious since they are clearly fulfilling a long felt, unresolved need.

### ***Conclusion***

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite

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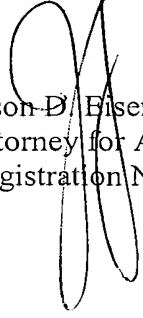
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prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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